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THE GENUS *NANNOCHELIFER* BEIER, WITH A NEW SPECIES FROM THE CORAL SEA (PSEUDOSCORPIONIDA, CHELIFERIDAE)

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ABSTRACT

The genus *Nannochelifer* Beier is redefined, the type species, *N. litoralis* Beier from Kenya, is redescribed, and a new species from Turtle Islet in the Coral Sea, *N. paralius*, is described.

INTRODUCTION

Of the 60 or so described genera of Cheliferidae, few are as poorly known as *Nannochelifer* Beier. It was erected in 1967 for a single littoral species from Kenya and, since then, has not been reported in the literature. Among material collected by Mr. Lionel Hill (Australian National Parks and Wildlife Service) on Turtle Islet in the Coral Sea were specimens pertaining to *Nannochelifer*. Comparison of these specimens with those of the type species, *N. litoralis*, has revealed several distinguishing characters which warrants the erection of a new species for the former material. This species is described below, and *N. litoralis* and the genus are redescribed.

Genus *Nannochelifer* Beier

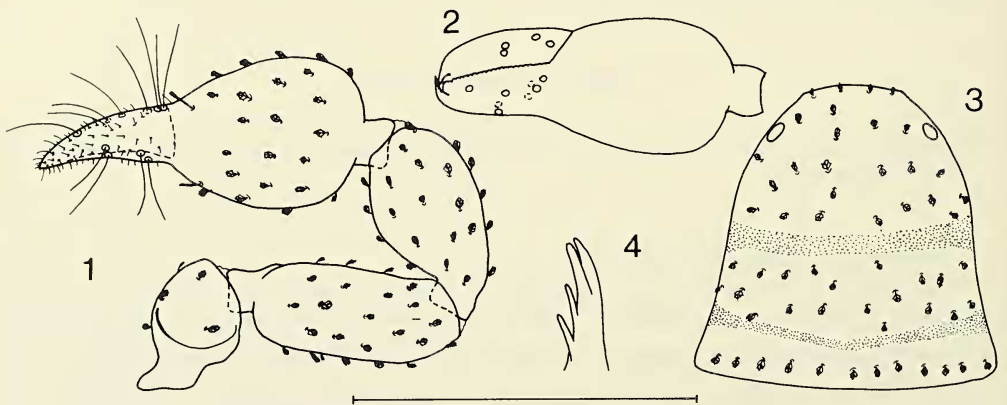
Nannochelifer Beier 1967:91. Type species by original designation and monotypy *Nannochelifer litoralis* Beier 1967.

Distribution.—Kenya and Coral Sea.

Diagnosis.—Vestitural setae of carapace and tergites broadly denticuloclavate; those of pedipalps similar but not as broad; those of anterior sternites acicular, becoming clavate on posterior sternites; coxal setae long and acicular. Pedipalpal trochanter with a dorsal protuberance, somewhat similar to that of *Americhernes oblongus* (Say) (Muchmore 1976: Fig. 7), but not quite so pronounced; femur strongly pedicellate; chela stout, chelal teeth flattened, not retrorse, both fingers with venom apparatus, nodus ramosus very short (Figs. 2, 7), dorsal margin of hand with one large, externodistal clavate seta and with a smaller, internodistal clavate seta (Figs. 1, 6); fixed finger with eight trichobothria

and movable finger with four trichobothria (Figs. 2, 7); *eb* and *esb* closely spaced, *et* subdistal, *est* equidistant between *esb* and *et*, *ist* and *it* virtually dorsal, subcontiguous, *isb* closer to *ib* than to *ist*, *st* and *t* contiguous, *sb* closer to *b* than to *st*. Cheliceral hand with five acicular setae (Fig. 14), *ls* very long, *is* long, *sb*, *b* and *es* short; *gs* subdistal; flagellum of three blades, the distal blade with several anterior spinules (the proximal blade often closely appressed to the next blade, and thus difficult to observe). Carapace (Fig. 3) with two distinct transverse furrows, posterior furrow closer to posterior margin of carapace than to anterior furrow; one pair of corneate eyes present; male without posterolateral keel. Coxal sac present in male (Fig. 10), with differentiated atrium, opening via a large pore; "seta-like processes" (Chamberlin 1931) often trifurcate; coxa IV without lateral spur. Male without posterolateral tergal keels. Female genitalia (Fig. 16) with one pair of lateral cribriform plates and a single median cribriform plate. Male genitalia (Figs. 11-13) with large ramshorn organs; statumen convolutum not invaginated; anteriorly directed dorsal apodemes large and distally curved; above the dorsal apodemes is a large sclerotized rod of unknown affinity; lateral apodemes poorly sclerotized; all setae of sternites II and III simple and not bifurcate. Leg I of male with unmodified tarsus and claws (Fig. 8). Legs (Figs. 8-9) with subterminal setae acicular and slightly arcuate; arolium shorter than claws; femoral divisions of legs I and II oblique; tactile setae absent. Anal plate subventral.

Remarks.—Since males possess a differentiated atrium of the coxal sac and a non-invaginated statumen convolutum, and females possess a single median cribriform plate, *Nannochelifer* clearly belongs to the Dactylochelifnerini as defined by Chamberlin (1932) (as Lissochelifnerini). The genus is distinct from other chelifnerid genera in several respects, including the disposition of the chelal trichobothria (especially the position of *st* and *t*), the presence of a large, externodistal clavate seta on the chelal hand, the stout pedipalps, and the form of the male genitalia (in particular, the size and shape of the dorsal apodemes). It appears to be most similar to *Nannochelifneroides* Beier from India, but can be distinguished from the latter by the presence of eyes and the position of trichobothrium *it*, which is adjacent to *ist* in *Nannochelifner* but is distinctly distal to *ist* in *Nannochelifneroides* (Beier 1974).



Figs. 1-4.—*Nannochelifer litoralis* Beier: 1, dorsal aspect of right pedipalp, male lectotype; 2, lateral aspect of right chela, male paralectotype; 3, dorsal aspect of carapace, male lectotype; 4, galea, female paralectotype. Scale line = 0.5 mm (Figs. 1-3).

Nannochelifer litoralis Beier
Figs. 1-5

Nannochelifer litoralis Beier 1967:92-93, Fig. 12.

Types examined.—Lectotype male (present designation), paralectotype male, paralectotype female, Silversands bei Malindi, Kenya, Strand, 7 August 1965 ([V.] Mahnert), NHMW (spirit).

Diagnosis.—Female galea with two distal, one subdistal and one subbasal rami; median disc of carapace with 20 (male), 17 (female) setae; pedipalps slightly broader than those of *N. paralius* (Fig. 5).

Description.—Pedipalps, carapace, tergites and legs strongly granulate; granulations absent from chelal fingers and distal portions of legs I and II; granulations smaller and more diffuse on tergites. Pedipalp (Fig. 1) very stout, trochanter 1.62-1.83 (male), 1.44-1.73 (female), femur 2.41-2.81 (male), 2.39-2.59 (female), tibia 1.91-1.94 (male), 1.81-1.96 (female), chela (with pedicel) 2.38-2.42 (male), 2.41 (female), chela (without pedicel) 2.15-2.26 (male), 2.24 (female) times longer than broad. Carapace (Fig. 3): anterior disc with 25 (male), 19 (female) setae, median disc with 20 (male), 17 (female) setae, posterior disc with 12-13 (male), 11 (female) setae; 0.99 (male), 1.02 (female) times longer than broad. Chelicera: serrula exterior with 11-13 (male), 11 (female)

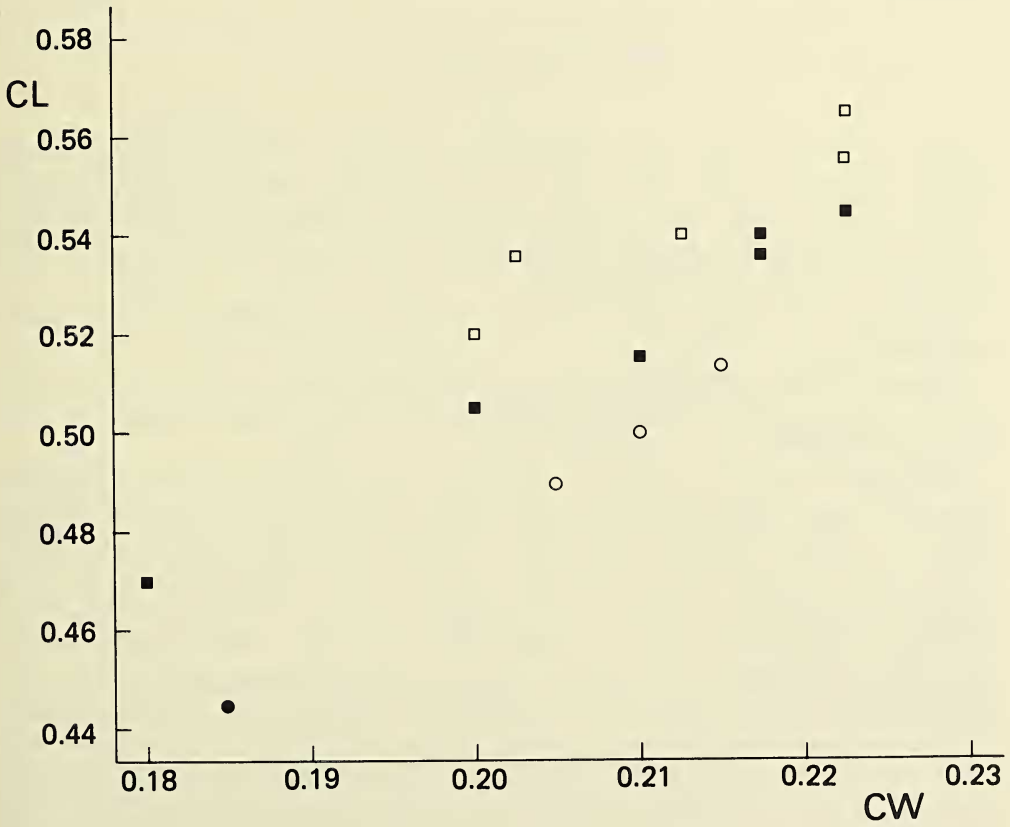


Fig. 5.—Graph of chela (with pedicel) length (CL) versus width (CW), in mm; males, open symbols; females, closed symbols: *Nannochelifer litoralis* Beier (circles), *N. paralius*, new species (squares).

lamellae; galea of male simple, of female with two distal, one subdistal and one subbasal rami (Fig. 4). Tergal chaetotaxy: male, 10-12:11:12:11-12:11-12:12-13:10-11:12:13:10-11:6-9:2; female, 11:10:11:10:12:12:10:10:12:10:9:2. Sternal chaetotaxy: male, 0:12-13:(0)40:(1)7-10(1):11-13:11-14:11-12:11:9-10:8-9:4-5:2; female, 0:7:(0)4(0):(1)5(1):13:12:11:11:10:10:4:2. Coxal chaetotaxy: male, 11-12:17-18:27-28:36-39; female, 10:14:20:29.

Dimensions (mm): Female measurements in parentheses. Body length 1.3-1.4 (1.3); pedipalps: trochanter 0.21-0.215/0.12-0.13 (0.18-0.19/0.11-0.125), femur 0.325-0.365/0.13-0.135 (0.275-0.285/0.11-0.115), tibia 0.29-0.305/0.155-0.16 (0.245-0.265/0.13-0.135), chela (with pedicel) 0.49-0.52/0.205-0.215 (0.445/0.185), chela (without pedicel) 0.44-0.485 (0.415), movable finger length 0.225-0.23 (0.21-0.215); chelicera 0.14-0.17/0.075-0.08 (0.14/0.07), movable finger length 0.10-0.13 (0.11); carapace 0.45-0.465/0.47 (0.42/0.41); leg I: trochanter 0.095/0.075 (?), femur I 0.10/0.085 (?), femur II 0.155/0.075 (?), tibia 0.155/0.065 (?), tarsus 0.18/0.05 (?); leg IV: trochanter 0.135-0.15/0.08-0.085 (0.14/0.08), femur I 0.125-0.13/0.08-0.09 (0.15/0.075), femur II 0.20-0.205/0.095-0.11 (0.155/0.07), tibia 0.215-0.22/0.065-0.07 (0.18/0.055), tarsus 0.215-0.22/0.05-0.055 (0.195/0.045).

Remarks.—Even though Beier (1967) referred to “Holo-und Allotype” in the original description, the three specimens lodged in NHMW were in a single vial. Thus, a lectotype male has been selected and preserved separately.

Nannochelifer paralius, new species

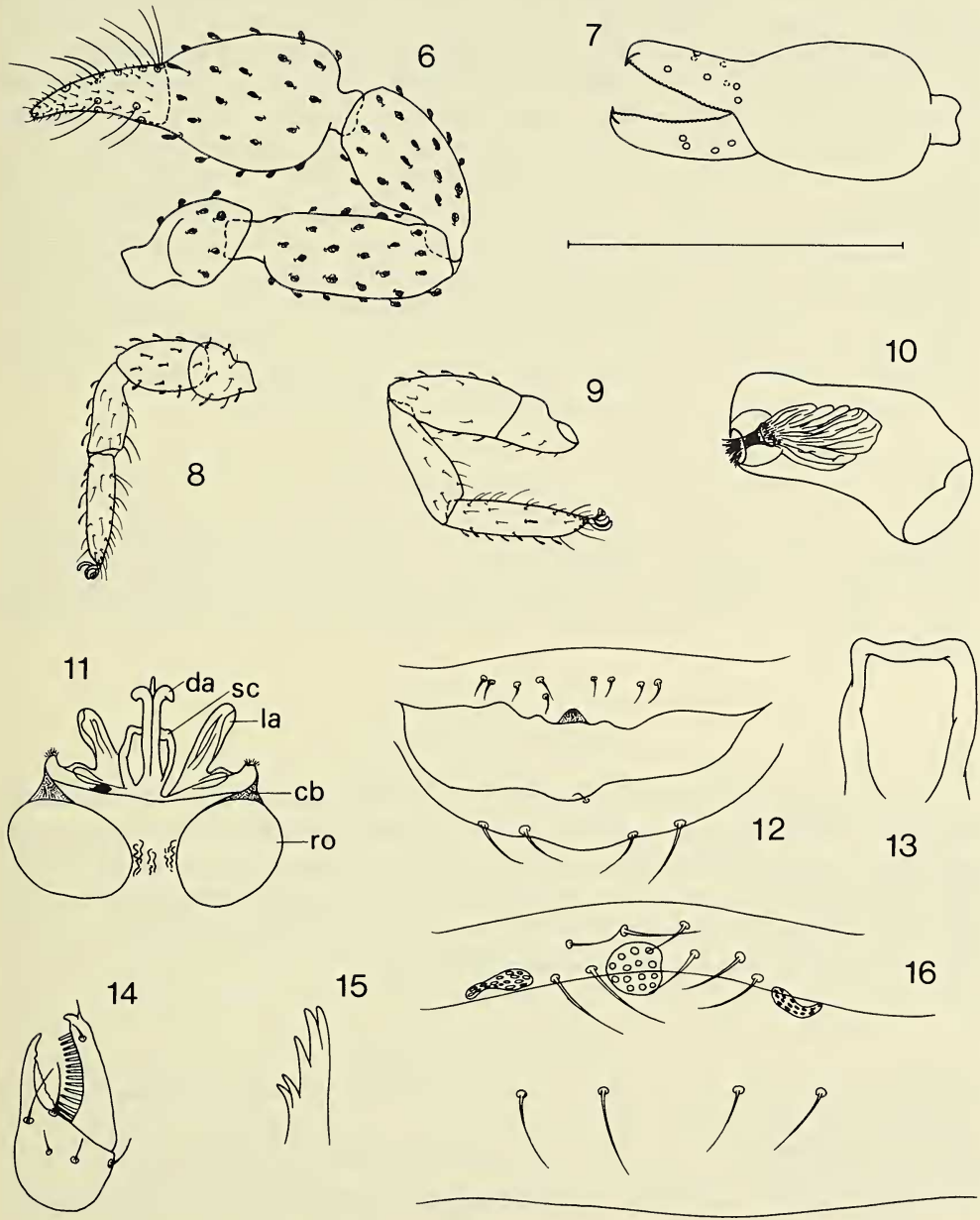
Figs. 5-16

Types.—Holotype male (Type No. 10003), 4 paratype males, 4 paratype females (1 with brood-sac), Turtle Islet, Lihou Reef, Coral Sea Islands Territory, Australia, 17°08'S 152°02'E, under coral and beachrock rubble on SW side of island, 18 July 1983 (L. Hill), ANIC (slides and spirit). Paratype male, same data as holotype except under beachrock, 1 December 1982, ANIC (slide).

Etymology.—The specific epithet refers to the littoral habitat preference of this species (*paralius* Gr. by or near the sea).

Diagnosis.—Female galea with two distal, one subdistal and two subbasal rami; median disc of carapace with 12-13 (male), 11-14 (female) setae; pedipalps slightly larger and more slender than those of *N. litoralis* (Fig. 5).

Description.—Pedipalps, carapace, tergites and legs strongly granulate; granulations absent from chelal fingers and distal portions of legs I and II; granulations smaller and more diffuse on tergites. Pedipalp (Fig. 6) stout, trochanter 1.43-1.85 (male), 1.58-1.76 (female), femur 2.54-2.92 (male), 2.68-2.91 (female), tibia 2.00-2.10 (male), 1.77-2.04 (female), chela (with pedicel) 2.47-2.60 (male), 2.42-2.61 (female), chela (without pedicel) 2.29-2.40 (male), 2.24-2.42 (female) times longer than broad. Carapace: anterior disc with 24-29 (male), 25-28 (female) setae, median disc with 12-13 (male), 11-14 (female) setae, posterior disc with 7-9 (male), 7-9 (female) setae; 1.08-1.22 (male), 1.00-1.22 (female) times longer than broad. Chelicera (Fig. 14): serrula exterior with 14-15 (male), 13-14 (female) lamellae; galea of male simple, of female with two distal, one subdistal and two subbasal rami (Fig. 15). Tergal chaetotaxy: male, 8-10:7-9:8-10:9-10:9-11:9-11:9-11:10-11:9-11:9-10:7-8:2; female, 7-9:8-12:8-11:9-10:9-10:10-11:10-12:9-12:9-13:9-11:6-10:2. Sternal chaetotaxy: male, 0:9-11:(0)4[0-2](0):(1)5-8(1):11-14:8-11:9-11:8-11:8-9:8-9:2-4:2; female, 0:7-9:(0)4(0):(1)4-5(1):11-15:8-11:7-12:8-



Figs. 6-16.—*Nannochelifer paralius*, new species: 6-10, male holotype: 6, dorsal aspect of right pedipalp; 7, lateral aspect of left chela; 8, left leg I; 9, left leg IV; 10, left coxa IV. 11-14, male paratype: 11, ventral aspect of genitalia; 12, ventral aspect of genital sternites; 13, ventral aspect of statumen convolutum; 14, dorsal aspect of right chelicera. 15-16, female paratype: 15, galea; 16, ventral aspect of genitalia and associated sternites. Scale line = 0.5 mm (Figs. 6-10), 0.56 mm (Figs. 11-13, 16), 0.28 mm (Fig. 14). Abbreviations: cb, chitinous border of ramshorn organ; da, dorsal apodeme; la, lateral apodeme; sc, statumen convolutum; ro, ramshorn organ.

10:8-12:8-9:4-5:2. Coxal chaetotaxy: male, 8-14:14-17:20-30:30-41; female, 8-11:13-18:17-25:25-36.

Dimensions (mm): Female measurements in parentheses. Body length 1.3-1.4 (1.4-1.7); pedipalps: trochanter 0.20-0.24/0.115-0.14 (0.175-0.22/0.11-0.13), femur 0.33-0.40/0.125-0.145 (0.32-0.355/0.11-0.13), tibia 0.29-0.34/0.145-0.17 (0.26-0.305/0.135-0.155), chela (with pedicel) 0.52-0.58/0.20-0.225 (0.47-0.545/0.18-0.225), chela (without pedicel) 0.48-0.535 (0.435-0.505), moveable finger length 0.245-0.265 (0.225-0.25); chelicera 0.15-0.17/0.07-0.09 (0.15-0.16/0.065-0.08), moveable finger length 0.12-0.135 (0.115-0.12); carapace 0.425-0.455/0.35-0.42 (0.415-0.48/0.38-0.43), eye diameter 0.035-0.04 (0.03-0.035); leg I: trochanter 0.095-0.10/0.07-0.09 (0.08-0.095/0.065-0.085), femur I 0.12-0.13/0.085-0.10 (0.105-0.125/0.08-0.09), femur II 0.155-0.175/0.08-0.095 (0.135-0.155/0.07-0.08), tibia 0.145-0.165/0.065-0.08 (0.135-0.155/0.055-0.07), tarsus 0.185-0.21/0.05-0.06 (0.18-0.20/0.045-0.055); leg IV: trochanter 0.155-0.17/0.08-0.095 (0.13-0.165/0.08-0.105), femur I 0.135-0.145/0.08-0.09 (0.125-0.15/0.075-0.085), femur II 0.205-0.225/0.085-0.10 (0.19-0.205/0.08-0.085), tibia 0.22-0.24/0.065-0.08 (0.195-0.23/0.06-0.08), tarsus 0.235-0.255/0.055-0.065 (0.215-0.225/0.05-0.06).

DISCUSSION

The occurrence of the genus *Nannochelifer* in only Kenya and the Coral Sea probably reflects a lack of collecting on the seashore in other parts of the world rather than a true disjunct distribution, and further collecting will surely uncover additional species of this interesting genus.

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